Academy, on "The Weather Bureau and its work," on the evening of February 21, illustrating his remarks by means of lantern slides.

Mr. J. Warren Smith, Section Director, Columbus, Ohio, visited the Farmers' Institute at Cridersville, Ohio, on February 28. At the morning session he delivered an address on "The work of the United States Weather Bureau and its relation to agriculture," in which he briefly outlined the general circulation of the atmosphere, the characteristics of the various atmospheric disturbances, both primary and secondary, the distinctive features of the three general cloud types, some phases of atmospheric electricity, and a brief history of the development of the observational work of the Weather Bureau.

At the afternoon session he again addressed the Institute, his subject being "Forecasts and warnings—how made, distributed, and utilized." The gradual expansion of the forecast system in the interest of the farmers, how best to profit by temperature forecasts and frost warnings, and methods of protection against frost, were among the subjects discussed.—*H. H. K.*

BACK NUMBERS OF THE REVIEW WANTED.

A correspondent wishes to obtain copies of the MONTHLY WEATHER REVIEW for February, 1884, and September, 1885, to complete his file. Volumes I to XIV, inclusive, and Volume XV, No. 2, are also desired to complete a set for a scientific library. Any one having these REVIEWS to dispose of will confer a favor by informing the Editor.

HOURLY TEMPERATURES FOR BALTIMORE, MD.

In the report for January, 1902, of the Maryland and Delaware section of the Climate and Crop Service, the Director, Dr. Oliver L. Fassig, states that a thermograph has been in use at the Baltimore office of the United States Weather Bureau since the first of January, 1893. From the record sheets of this instrument the average hourly values of temperature for each month have been computed for the nine years from 1893 to 1901. In the accompanying diagram, fig. 1, these values are graphically represented for the months of January, April, July, and October, and for the year as derived from the twelve monthly values. According to customary nomenclature the average temperature of any month is derived from the 24 hourly averages; we find for each month the following agreement between the averages for nine years of daily maximum and minimum temperatures, and of the 24 hourly observations:

$$\text{January } \frac{(\text{max.} + \text{min.})}{2} - \text{monthly average} = +0.3°$$

$$\text{April} \quad " \quad " \quad " \quad " = +0.0°$$

$$\text{July} \quad " \quad " \quad " \quad " = -0.1°$$

$$\text{October} \quad " \quad " \quad " \quad " = +0.4°$$

The difference between the averages of the 8 a. m. and 8 p. m. temperatures and the monthly averages are as follows:

$$\text{January } \frac{8 \text{ a. m.} + 8 \text{ p. m.}}{2} - \text{monthly averages} = -1.1°$$

$$\text{April} \quad " \quad " \quad " \quad " = -0.8°$$

$$\text{July} \quad " \quad " \quad " \quad " = -0.7°$$

$$\text{October} \quad " \quad " \quad " \quad " = -1.6°$$

The mean annual temperature for each hour for the nine years of record is given in the following table:

	1	2	3	4	5	6	7	8	9	10	11	12	Average.
A. M..	51.8	51.1	50.5	50.0	49.5	49.4	50.1	51.7	53.6	55.6	57.4	59.0	55.0
P. M..	60.1	60.9	61.3	61.1	60.2	59.0	57.6	56.3	55.2	54.2	53.3	52.5	

The periodic daily amplitude in temperature is the difference between the highest and lowest hourly means. The aperiodic daily amplitude is the difference between the means of the maximum and the minimum temperatures. The latter is always the larger, because the extremes of temperature rarely occur at the moment an hourly reading is taken.

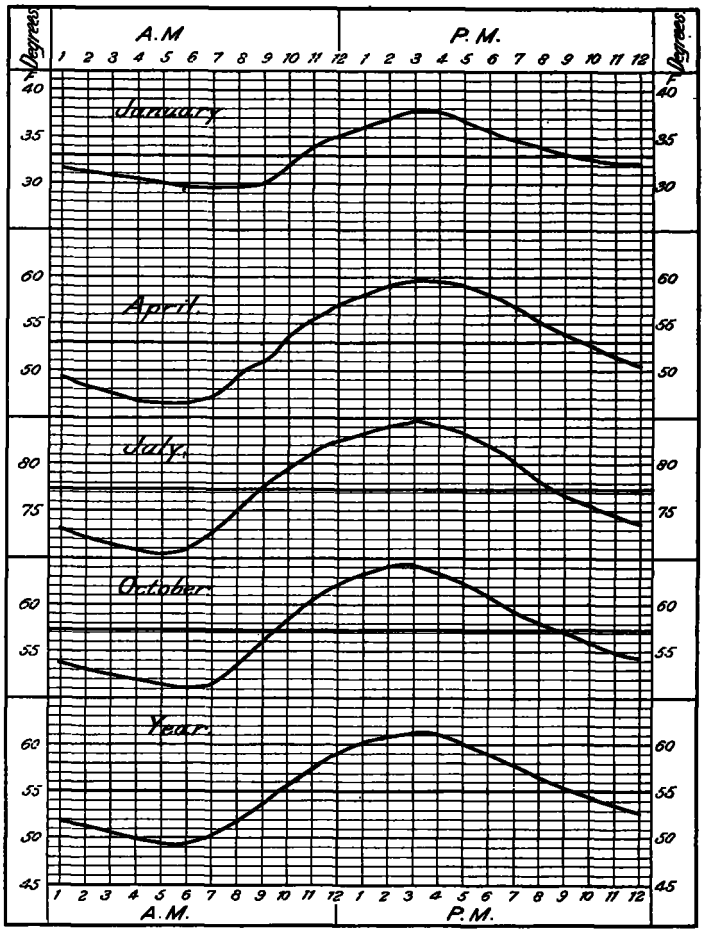

FIG. 1.—Average hourly temperature curves for Baltimore, Md., (1893–1901).

The following table shows the hours of occurrence of the periodic maximum, minimum, and mean temperatures for the different months and for the year.

Month.	Maximum. P. M.	Minimum. A. M.	Mean. A. M.	Mean. P. M.
January	3	7	11	10
February	3	7	11	10
March	3	6	10	10
April	3	6	10	10
May	3	5	9	9
June	3	5	9	9
July	3	5	9	9
August	3	5	9	9
September	3	6	9	9
October	3	6	10	9
November	3	7	10	9
December	3	7	10	9
Year	3	6	10	9

H. H. K.

METEOROLOGY AND THE SCHOOLS.

In his Report to the Secretary of Agriculture for the year ending June 30, 1901, the Chief of the Weather Bureau referred to the increasing demand for lectures and instructions by Weather Bureau officials before schools and colleges. That meteorology can be made an interesting study for the younger pupils as well as for the more advanced, is demon-